

REMARKS/ARGUMENTS

This paper is submitted supplemental to the response of August 10, 2010 and following a telephone interview conducted with Examiner Sorkin wherein the present claims and pending prior art rejection were discussed at length. The undersigned would like to thank Examiner Sorkin for the time and courtesy extended during the interview, which was quite productive in helping the undersigned formulate a response which addresses the various issues remaining in this case.

By the present response, the pending claims have been amended to add new dependent claims 27-29. This leaves independent claim 1 as previously pending, and this claim is still believed to be allowable over the art of record. In the meantime, new dependent claims 27-29 further define specific structures of the presently claimed device, and it is believed that these additional structures respond to specific interpretations of the prior art as discussed during the aforesaid telephone interview.

The key issue in this case is distinguishing the mixing chamber and temperature control channel of present claim 1 from the teachings of US Patent 5,534,328 to Ashmead. Claim 1 calls for at least one mixing chamber and for a wall of the at least one mixing chamber to have at least one temperature control channel, separate and discrete from the at least one mixing chamber, for feeding or removing heat to or from the at least one mixing chamber. Referring to Figure 2, the mixing chamber is defined by distribution channels and cut-outs **161, 177, 181** as shown in Figures 2g, h and i. These channels and cut-outs

convey reactants from two different vertical chambers within the device defined by the cut-outs which align with cut-outs **160** in Figure 2g and cut-out **182** in Figure 2i. Channels **161** convey one reactant into the mixing chamber and channels **181** convey the other reactant into the mixing chamber. At the other end of the plates, along the bottom of the figures as viewed in Figure 2 when the reference numerals are properly vertically aligned, the ends of the channels of the mixing chamber are aligned with a vertical chamber defined by the cut-outs in the various plates and aligned for example with cut-out **196** as shown in Figure 2k. Thus, mixed reactants from the mixing chamber travel into this vertical chamber, and ultimately exit the device from the top plate at outlet **115** as shown in Figure 2a.

Further explaining the specific structures of the present application, the temperature control channels are shown, for example referring to Figure 2g, by cut-outs **162, 163, 164** and **165**. These cut-outs form a portion of a vertical chamber defined around the mixing chamber, and also passing above and below the mixing chamber through the channels shown in Figures 2e and 2l at reference numerals **142, 143** and **144** as well as reference numerals **202, 203** and **204**. Thus, the walls surrounding the mixing chamber contain the temperature control chambers as called for in claim 1.

The key issue in this case is whether Ashmead discloses this same recited structure. As a matter of general function of the device, it is first respectfully submitted that this is clearly not the case. Specifically, the heat exchanger portion of Ashmead is said to be defined between plates **500** and **600** while the mixing chamber is defined between plates **200** and **300**,

and a thermal barrier is defined between plates **400** and **500**. Thus, referring to Figure 2, this clearly shows that a thermal barrier is positioned between the heat exchanger and the mixing chamber. Thus, the heat exchanger of Ashmead is clearly not designed or intended to feed or remove energy to or from the mixing chamber in this device. Nevertheless, the Examiner is of the opinion that the language of claim 1 is not sufficiently specific to avoid the teachings of Ashmead. It was determined during the aforesaid telephone interview that the Examiner considers the vertical channels as shown in Figure 5 of Ashmead at reference numerals **50v**, **550v**, **650v**, **750v** and **850v** to be part of the "mixing chamber" as disclosed by Ashmead.

Applicants respond to this in several ways. First, reconsideration of this holding based upon the fact that the channels recited above in Figure 5 of Ashmead appear to be the outlet of the device, and not the mixing chamber which is defined between the grooves formed on the facing surfaces of plates **200** and **300**. In addition, dependent claims 25-29 have been added to present additional specific structure of the present device which responds to this interpretation so as to address the issue should the Examiner not be persuaded by the above discussion with respect to independent claim 1. Dependent claim 25 specifies that the at least one mixing chamber is defined by cut-outs in a plurality of plates and/or sheets bearing against one another, and wherein the at least one temperature control channel is defined by additional cut-outs in the plurality of plates or sheets. Through antecedent basis it is clear that this claim calls for cut-outs defining the mixing chamber and cut-outs defining the temperature control channel to be defined in the same plurality of plates.

Dependent claim 26 further sets forth structural limitations requiring this arrangement.

Dependent claim 27 adds structure to define the actual location of the mixing chamber as being distribution channels and cut-outs in a plurality of plates or sheets bearing against one another, and for the plurality of plates or sheets which have the distribution channels and cut-outs to also have cut-outs for defining the at least one temperature control channel. The distribution channels and cut-outs which define the mixing chamber are shown in Figures 2g, h and i as discussed above. Clearly, these structures are different and distinct from the passages **50v**, **550v**, etc. of Figure 5 of Ashmead which are considered by the Examiner to form part of the mixing chamber, and with the mixing chamber defined as recited in dependent claim 27, no interpretation of Ashmead can result in temperature control channels being formed in the same plates which define the mixing chamber.

Dependent claim 28 further adds to dependent claim 27 and recites the distribution chamber and collection chamber which pass vertically through the plates defining the mixing chamber and further requires that the distribution channels and cut-outs which define the mixing chamber connect the at least one distribution chamber to the at least one collection chamber. This is as shown in Figures 2g, h and i wherein the channels and cut-outs **161**, **177** and **181** extend along the plates to connect the distribution chambers vertically defined at cut-outs **160** and **182** with the collection chamber defined at **196**, all as discussed above. This structure is likewise clearly not disclosed or suggested by Ashmead.

Finally, new dependent claim 29 specifies that the distribution channels and cut-outs are formed along planer surfaces of the plurality of plates or sheets, and that the distribution chamber and the collection chamber extend perpendicularly through the same plurality of plates or sheets that have distribution channels and cut-outs to define the mixing chamber. Thus, dependent claim 29 now specifically calls for the plates in question to define the mixing chamber, a portion of the temperature control channel, and distribution and collection chambers as well. Clearly no plates in Ashmead define all these structures with portions of cut-outs of all three chambers and passages in specific plates.

Based upon the foregoing, it is respectfully submitted that new dependent claims 27-29, as well as previously added dependent claims 25 and 26 and independent claim 1 all contain structures which clearly define over Ashmead. Further, dependent claims 2-24 all depend directly or indirectly to independent claim 1 and are submitted to be allowable based upon this dependency, and also in their own right. Numerous dependent claims recite additional structures which are believed to be absent from Ashmead.

An earnest and thorough effort has been made by the undersigned to respond to all issues raised by the Examiner in the aforesaid office action and during the aforesaid telephone interview. If, upon consideration of this response, the Examiner believes issues remain which could be resolved by telephone discussion, the Examiner is invited to telephone the undersigned to discuss and resolve same.

Appln. 10/553,404

Response to Office Action Mailed March 10, 2010

Response dated March 3, 2011

This paper is accompanied by authorization to charge a Deposit Account for three extra claims. It is believe that no additional fee is due. If any such fee is due, please charge same to Deposit Account 02-0184.

Respectfully submitted,

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Date: March 3, 2011